Drainage Basin Size Related to Stream Origins in Forests of Washington: The Results of the Type N Demarcation Study

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The Type N Demarcation Study is designed to validate the default basin areas for the break between perennial (Np) and seasonal (Ns) streams in forested headwaters on FFR lands. The pilot phase, which is reported here, was conducted in 2001 to (1) Test a field protocol for collecting field data on Type N streams; and (2) Determine the variability of headwater basin areas to estimate the sample size required to collect a statistically valid sample the statewide survey during a subsequent year. The pilot field protocol was developed in early summer of 2001 and ten field parties using the pilot protocol surveyed over 230 headwater basins across the state in August and September of that year. Comments from the field parties and data analyses indicated the field protocol was suitable with slight modification for the statewide survey. Analysis of the basin areas above the Np/Ns break indicated that the observed basin areas have a log-normal distribution; are smaller than the default basin areas (Table 1); and that to estimate the median basin area within 90% confidence interval and with 10% precision would require a sample of 100 basins per stratification cell, i.e. present default regions are eastside of Cascade crest, westside of crest and coastal zone within the eastside. Study results also included a recommendation to consider average annual precipitation classes as the basis for default regions and distance from the drainage divide to the Np/Ns break as an alternative default measure. The report was submitted to Policy on October 13, 2003.

Table 1: Estimated basin areas above the Np/Ns by FFR default region

SUMMARY STATISTIC (in acres)	FFR Default Region		
	Eastside	Westside	Coastal
Default Area	300	52	13
Sample Size	43	132	18
Average Area	118	24	8
Median Area	36	7	2
1st Quartile Area	9	4	1
3rd Quartile Area	68	24	5
Maximum Area	1,224	260	85

The Np pilot study was the cooperative effort of the Campbell Group, Colville Confederated Tribes, Hoh Tribe, Longview Fibre Co., Port Gamble S'Klallam Tribe, Skagit Tribe, Spokane Tribe, Suquamish Tribe, Washington department of Fish and Wildlife, Yakama Nation and the members of the Upslope Science Advisory Committee, the Np technical group, and CMER reviewers. Their many contributions made this study possible.

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